

REMARKS

Claims 1-5, 7-8, 10-30, and 32-38 are pending in the application. Claims 6, 9, and 31 are cancelled. Claims 1, 7, 10, 11, 14, 18, 29, and 33 are currently amended.

Applicant respectfully requests for allowance of all the pending claims based on following discussions.

Objections to Drawings

The drawings are objected to because certain limitations recited in claim 29 are not properly supported by the drawings. In response to the objections, claim 29 is amended by deleting the term “directly.” Thus, Applicant respectfully submits that the objections are overcome.

Objections to Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. Specifically, the preliminary amendment changing the phrase in claims 1 and 18 “isolating from the ambient atmosphere, fluid drawn from the apparatus by the pump” to “isolating fluid drawn from the apparatus by the pump from the ambient atmosphere” is not supported by the original specification. In response, claims 1 and 18 are amended by replacing the latter phrase with the former. Thus, Application respectfully submits that the objections are overcome.

Rejections under 35 USC §112

Claims 6, 7, 14, 15, 30, 32, and 33 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Examiner rejects claim 6 for the reason that the language “means for connecting the damper” is a means plus function limitation that fails to clearly link or associate the disclosed structure, material, or acts to the claimed function, such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function. In response, claim 6 is hereby cancelled.

Examiner rejects claim 14 for the reason that the language “extension limiting means” is indefinite as it is unclear whether the extension limiting means refers to the means for limiting axial extension or compression. In response, claim 14 is amended by replacing “extension limiting means” with “means for limiting axial extension.” Thus, Applicant respectfully submits that the rejection is overcome.

Examiner rejects claim 30 for the reason that the language “means for contacting” is a means plus function limitation that fails to clearly link or associate the disclosed structure, material, or acts to the claimed function, such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function. In order to overcome the rejection, Examiner requires Applicant to state on the record where the corresponding structure, material, or acts are set forth in the written description of the specification that perform the claimed function.

Applicant respectfully submits that “means for contacting” refers to the mechanism that inhibits the rotational movement between the upper and lower flanges of the vibration damper. For example, as illustrated in FIG. 10, the mechanism is constructed by support members 43 and 44, interference rings 46 and 47, and clearance holes 48 and 49. The workings of these components are described in the specification on page 9, the second paragraph, as following.

In normal operation of the vacuum system, all movement within the vacuum damper 40 is in the axial direction and no contact is made between support members 43 and interference ring 47 or between support members 44 and interference ring 46 due to the provision of clearance holes 48, 49. However, if the vacuum pump 8 seizes in such a way that angular momentum is transferred to a housing of the pump 8 to cause it to rotate relative to the apparatus 7, each interference ring 46, 47 will start to rotate and will, therefore come into contact with respective support members 44, 43. In order for the pump 8 to rotate further, each of these support members 44, 43 must deform. Such deformation takes more energy out of the system and therefore reduces the likelihood that the vacuum pump 8 will be separated from the apparatus 7. Hence, further destruction or injury may be avoided.

As such, Applicant respectfully submits that a detailed description of the “means for contacting” has been provided on the record, and therefore respectfully requests that the rejection be withdrawn.

Claims 7, 15, 32, and 33 are rejected due to their dependency on original claim 6 or 14. Thus, Applicant respectfully submits that the rejections to claims 7, 15, 32, and 33 are overcome for the reasons discussed above.

Rejections under 35 USC §103

Claims 1-8 and 16-18

Claims 1-8 and 16-18 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,065,780 to Hiroshima (hereinafter referred to as “Hiroshima”) in view of US Patent No. 3,000,389 to Alsager et al. (hereinafter referred to as “Alsager”), US Patent No. 3,799,531 to Yamazaki et al. (hereinafter referred to as “Yamazaki”), and US Patent No. 4,755,025 to Cutburth (hereinafter referred to as “Cutburth”).

Independent claim 1, as amended, is directed to a vibration damper for inhibiting transfer of vibration to an apparatus during the evacuation thereof by a pump, the damper comprising a bellows arrangement for isolating from the ambient atmosphere, fluid

drawn from the apparatus by the pump, and means for limiting axial compression of the bellows arrangement during use of the damper, wherein the damper is axially pre-compressed by means for limiting axial extension of the bellows arrangement, but simultaneously permitting axial compression of the same. Applicant respectfully submits that none of the cited prior art references teaches the claim limitation “wherein the damper is axially pre-compressed by means for limiting axial extension of the bellows arrangement, but simultaneously permitting axial compression of the same.”

Examiner points out that Cutburth teaches in col. 4, lines 6-10, the limitation of bellows of a damper being pre-compressed. *See, the Office Action, page 8, lines 6-7.* However, Applicant respectfully submits that in Cutburth, the mechanism used to effect the pre-compression limits both the extension and compression of the bellows, and therefore is different from the claimed invention. As illustrated in FIG. 2 of Cutburth, the bellows 51 is pre-compressed by a turnbuckle unit 55 rotatably mounted on a threaded rod 57 attached to the bracket 58 at its two ends. *See, col. 3, line 57 – col. 4, line 3.* It can be inferred therefrom that the distance between two ends of the bracket 58 is fixed, when the turnbuckle unit 55 is not rotating. As such, although the mechanism can pre-compress the bellows 51 by limiting its axial extension, it would not be able to simultaneously permit an axial compression of the same.

Examiner acknowledges “Hiroshima, as modified, is silent with regards to the dampers being axially pre-compressed.” *See, the Office Action, page 8, lines 4-5.*

Alsager is cited by Examiner for its teaching of a resistive element. *See, the Office Action, page 7, lines 13-17.* Applicant respectfully submits that Alsager does not teach “wherein the damper is axially pre-compressed by means for limiting axial

extension of the bellows arrangement, but simultaneously permitting axial compression of the same.”

Yamazaki is cited by Examiner for its teaching of a coil spring. *See, the Office Action, page 7, lines 18-20.* Applicant respectfully submits that Alsager does not teach “wherein the damper is axially pre-compressed by means for limiting axial extension of the bellows arrangement, but simultaneously permitting axial compression of the same.”

For the reasons discussed above, Applicant respectfully submits that independent claim 1 is patentable over Hiroshima in view of Alsager, Yamazaki, and Cutburth under 35 USC 103(a). Accordingly, claims 2-5, 7-8, 16, and 17 that depend from claim 1 and include all the limitations recited therein are also patentable over the cited prior art references under 35 USC 103(a).

Independent claim 18 also includes the limitation “wherein the damper is axially pre-compressed by means for limiting axial extension of the bellows arrangement, but simultaneously permitting axial compression of the same.” For the reasons discussed above, Applicant respectfully submits that independent claim 18 is also patentable over Hiroshima in view of Alsager, Yamazaki, and Cutburth under 35 USC 103(a).

It is noted that claim 6 is cancelled.

Claims 9-15, 32, and 33

Claims 9-15, 32, and 33 are rejected under 35 USC 103(a) as being unpatentable over Hiroshima in view of Alsager, Yamazaki, Cutburth, and FIGs. 1 and 2 of the present application.

Claims 10-15, 32 and 33 depend from independent claim 1 and include all the limitations recited therein. Accordingly, Applicant respectfully submits that claims 10-15, 32, and 33 are patentable over the cited prior references under 35 USC 103(a) by virtue of their dependency on claim 1.

It is noted that claim 9 is cancelled.

Claims 19-30, and 34-38

Claims 19-30 and 34-38 are rejected under 35 USC 103(a) as being unpatentable over Hiroshima in view of Alsager, Yamazaki, Cutburth, and further in view of US Patent No. 5,090,746 to Holzhausen (hereinafter referred to as “Holzhausen”).

Claims 19-30 and 34-38 depend from independent claim 1 or 18 and include all the limitations recited therein. Accordingly, Applicant respectfully submits that claims 19-30 and 34-38 are patentable over the cited prior references under 35 USC 103(a) by virtue of their dependency on claim 1 or 18.

CONCLUSION

Applicant has made an earnest attempt to place this application in an allowable form. In view of the foregoing remarks, it is respectfully submitted that the pending claims are drawn to a novel subject matter, patentably distinguishable over the prior art of record. Examiner is therefore, respectfully requested to reconsider and withdraw the outstanding rejections.

Should Examiner deem that any further clarification is desirable, Examiner is invited to telephone the undersigned at the below listed telephone number.

Applicant does not believe that any additional fee is due, but as a precaution, the Commissioner is hereby authorized to charge any additional fee required by this submission to deposit account number 50-4244.

Respectfully submitted,

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